REMARKS/ARGUMENTS

Favorable consideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1 and 4-17 are pending in the present application. Claims 1 and 5-17 are amended and Claims 2 and 3 are cancelled by the present amendment. Support for the present amendment is found in Applicants' originally filed specification. No new matter is added.

In the outstanding Office Action, Claims 6, 9, 14 and 17 were rejected under 35 U.S.C. §101 as directed to non-statutory subject matter; Claims 1, 2 and 4-17 were rejected under 35 U.S.C. §103(a) as unpatentable over Arai (U.S. Pat. No. 6,813,370) in view of Lee et al. (U.S. Pat. No. 7,113,632, herein "Lee"); and Claim 3 was rejected under 35 U.S.C. §103(a) as unpatentable over Arai and Lee in view of Gracias et al. ("Robust Estimation of the Fundamental Matrix and Stereo Correspondences," herein "Gracias").

With respect to the rejection of Claims 6, 9, 14 and 17 under 35 U.S.C. §101 as directed to non-statutory subject matter, Applicants have amended Claims 6, 9, 14 and 17 as suggested in the outstanding Office Action. Accordingly, Applicants respectfully request that the rejection of Claims 6, 9, 14 and 17 under §101, be withdrawn.

Addressing now the rejection of Claims 1, 2 and 4-17 under 35 U.S.C. §103(a) as anticipated by Arai and Lee, that rejection is respectfully traversed.

Amended Claim 1 recites, in part,

> an image input device to which a pair of images is input from the one pair of image pickup devices;
> a straight-line detector detecting at least four straight lines from each image of the pair of images output from the image input device;
> a straight-line correspondence detector detecting at least four sets of corresponding lines between the pair of images by using an image feature in a neighboring area of each of the four straight lines detected for each image of the pair of images; and

> a transformation matrix calculator calculating the transformation matrix by using the sets of corresponding lines,
> wherein the straight-line correspondence detector is configured to:
> obtain data series regarding the image feature in the neighboring area for each of the four straight lines detected for each image of the pair of images;
> obtain data differences between each of data in the data series of each of the four straight lines detected for a first image of the pair of images and each of data in the data series of each of the four straight lines detected for a second image of the pair of images;
> obtain normalized distances by normalizing a weighted sum of the data differences using a sum of weighting factors; and
> determine one of the four straight lines in the first image of the pair of images and the corresponding one of the four straight lines in the second image of the pair of images having a smallest normalized distance as a pair of corresponding lines.

Although of differing class and/or scope, independent Claims 5-10 and 13-17 recite similar features.

Arai describes a technique for correcting a pitch of a vehicle and tilt of a road surface using corresponding points between a pair of cameras for detecting lanes on the road. However, as acknowledged on page 4, line 12 of the outstanding Action, Arai does not describe or suggest calculating a transformation matrix. Further, as acknowledged on page 8, in item 4, Arai does not describe the features of the straight-line correspondence detector.

However, the outstanding Action relies on Lee and Garcia as curing the above noted deficiencies of Arai.

Lee describes a technique for obtaining a transformation matrix to be used in performing correction when displaying an image on a naked-eye stereoscopic image display, specifically, in order to remove vertical disparity.

The outstanding Action states on page 4 that "Lee discloses a rectification method...that includes calculating a transformation matrix." However, Applicants respectfully submit that the method described in Lee is not equivalent to the transformation

feature recited in Claim 1. Specifically, Claim 1 recites that the transformation matrix is obtained directly from a set of corresponding lines. In other words, the transformation matrix is not obtained using initial values, as in the Lee reference. Thus, the Lee reference cannot be used to cure the deficiencies of Arai with respect to the transformation matrix of Claim 1 as the Lee reference does not describe or suggest "calculating the transformation matrix by using the sets of corresponding lines."

Further, with respect to the Garcia reference, this reference describes a technique in which coordinates of corresponding points are normalized by their center point. In contrast, Claim 1 recites obtaining normalized distances by normalizing a weighted sum of the data differences using a sum of weighting factors and determining one of the four straight lines in the first image of the pair of images and the corresponding one of the four straight lines in the second image of the pair of images having a smallest normalized distance as a pair of corresponding lines. In other words, Claim 1 recites that normalized "distance" of the image features near the lines (e.g. resemblance of image patterns) is used. Thus, Garcia does not cure the deficiencies of Arai and Lee with respect to the features added to amended Claim 1.

Therefore, in light of the above discussion it is clear that the combination of Arai, Lee and Garcia cannot be used to render unpatentable the features recited in Claim 1 and similarly Claims 5-10 and 13-17.

Accordingly, Applicants respectfully submit that Claims 1, 5-10 and 13-17, and claims depending therefrom, patentably distinguish over Arai, Lee and Garcia considered individually or in any proper combination.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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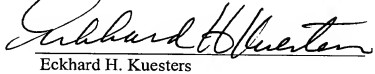

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